WHAT IS CLAIMED IS:

1. A simulation program product for controlling a computer having a model data base,

said product storing a plurality of simulation models, which simulate the operation of a subject, and comprising:

condition inputting means for causing the computer to set an initial state of the subject to be simulated, a simulation condition and a selection condition of the simulation model;

model selecting means for causing the computer to select said simulation model on the basis of said set selection condition of the simulation model and to read out the selected simulation model from said model data base;

simulation calculating means for causing the computer to apply said set initial state of the subject and said set simulation condition to said read out simulation model and to calculate the simulation; and

result outputting means for causing the computer to output a result of said simulation calculation.

2. A simulation program product for controlling a computer having a model data base, said product storing a plurality of simulation models, which simulate the operation of a subject, and comprising:

condition inputting means for causing the computer to set an initial state of the subject to be simulated,

a simulation condition and a selection condition of the simulation model;

model selecting means for causing the computer to select said simulation model on the basis of at least one state of said subject state and said environment state and said set selection condition of the simulation model and to read out the selected simulation model from said model data base;

simulation calculating means for causing the computer to apply said set initial state of the subject and said set simulation condition to said read out simulation model to calculate the simulation as well as for causing the computer to input at least one state of said subject state and said environment state obtained from the calculation in said model selecting means; and

result outputting means for causing the computer to output a result of said simulation calculation.

3. A simulation program product according to claim 2, wherein said selection condition has changing information to change the selected simulation model and the changing information includes a content, said content is defined by accordance with a state of a subject and/or a state of an environment to be inputted from said simulation calculating means and a threshold value set in advance with respect to the state of said subject and/or said state of said environment, said content designates simulation models which are

different from each other with a border of said threshold value are designated.

4. A simulation program product according to claim 3, further comprising variable converting means for causing the computer to read out a variable value of a present simulation model from said simulation calculating means, when the selected simulated model is changed by the changing information to convert this variable value into a variable value of a simulation model newly selected by said model selecting means and to input the obtained variable value in said simulation calculating means.

5. A simulation program product according to claim 4, wherein said variable converting means includes means for carrying out the conversion of said variable value on the basis of a conversion rule, which describes a conversion relation of the variable values between the models, by using a state of a periphery and a state of an environment to be obtained from said simulation calculating means.

6. A simulation program product according to claim 1, wherein said selection condition includes designating a simulation model directly.

7. A simulation program product according to claim 1, wherein said selection condition includes dividing a space in which said subject operates into some segments and designating a simulation model for

each segment.

8. A simulation program product according to claim 1, wherein said selection condition includes designating a partial segment of said space in which the subject operates as well as designating a simulation model in the segment.

9. A simulation program product according to claim 1, wherein said selection condition includes dividing a simulation time into a plurality of times and designating a simulation model for each time.

10. A simulation program product according to claim 1, wherein said selection condition includes designating a partial time of the simulation time as well as designating a simulation model correspond to the simulation time.

11. A simulation program product according to claim 1, wherein said selection condition includes dividing a space in which said subject operates into a plurality of segments, dividing the simulation time into a plurality of times and designating a simulation model in association with a combination of each time and each segment.

12. A simulation program product according to claim 1, wherein said selection condition includes designating a partial time of the simulation time as well as designating a partial segment in said space in

which the subject operates and designating a simulation model in association with a combination of the times and the segments.

13. A simulation program product according to claim 1, wherein said selection condition includes dividing a space in which said subject operates into a plurality of segments and designating a simulation model in a segment in which said subject is located.

14. A simulation program product according to claim 1, wherein said selection condition includes designating said subject and designating a simulation model in association with an area in a predetermined range of which the approximate center is the subject.

15. A simulation program product according to claim 1, further comprising data calculating means for causing the computer to calculate used data of a simulation model after switching from used data of a simulation model before switching on the basis of a relation of the mutual used data in two simulation models of a subject to be switched upon said switching.

16. A simulation method utilizing a model data base in which a plurality of simulation models simulating the operation of the subject are stored, comprising:

inputting a condition to set an initial state of said subject, a simulation condition and a selection condition of the simulation model;

selecting said simulation model on the basis of said set selection condition of the simulation model and reading out the selected simulation model from said model data base;

applying said set initial state and said set simulation condition to said read out simulation model and calculating a simulation; and

outputting a calculation result by said simulation calculating step.

17. A simulation method utilizing a model data base in which a plurality of simulation models simulating the operation of the subject are stored, comprising:

inputting a condition to set an initial state of said subject, a simulation condition and a selection condition of the simulation model;

selecting said simulation model on the basis of at least one of said subject state and said environment state and said set selection condition of the simulation model and reading out the selected simulation model from said model data base;

applying said set initial state and said set simulation condition to said read out simulation model and calculating a simulation as well as inputting at least one of said subject state and said environment state obtained from the calculation, in said model selecting means; and

outputting a result of said simulation calculating.

18. A simulation method according to claim 17, wherein said selection condition has changing information to change the selected simulation model and said changing information includes a content, said content is defined by accordance with a state of a subject and/or a state of an environment to be inputted from said simulation calculating step and a threshold value set in advance with respect to said state of said subject and/or said state of said environment, said content designates simulation models which are different from each other with a border of said threshold value are designated.

19. A simulation method according to claim 18, further comprising the step of reading out a variable value of a present simulation model from said simulation calculating step, when the selected simulated model is changed by the changing information, converting this variable value into a variable value of a simulation model newly selected by said model selecting step and inputting the obtained variable value in said simulation calculating step.

20. A simulation method according to claim 19, wherein said variable converting step includes a step for carrying out the conversion of said variable value on the basis of a conversion rule, which

describes a conversion relation of a variable value between the models, by using a state of a periphery and a state of an environment to be obtained from said simulation calculating step.

21. A simulation method according to claim 17, further comprising:

calculating a simulation for each simulation model with respect to a first simulation model with a certain degree of details and a second simulation model with a degree of details, which is lower than that of the first simulation model upon setting said selection condition;

as a result of calculation of said respective simulations, outputting error differential data of said both calculation results, used data of said respective simulation models and error differential data of said both used data; and

detecting the used data in which the error differential data is large when the error differential data is large as a result of said both calculations and setting a threshold value of the used data into a selection condition for said switching.

22. A simulation system for utilizing a model data base which stores a plurality of simulation models, which simulate the operation of a subject comprising:

a setting device which sets an initial state of said subject, a simulation condition and a selection

condition of said simulation model;

a model selector which selects a simulation model on the basis of the selection condition set by said setting device to read out the simulation model from said model data base;

a simulation calculator which calculates the simulation by using a simulation model read out from said model selector on the basis of said initial state and said simulation condition set by said setting device; and

an outputting device which outputs the calculation result by said simulation calculator.

23. A simulation system for utilizing a model data base which stores a plurality of simulation models, which simulate the operation of a subject comprising:

a setting device which sets an initial state of said subject, a simulation condition and a selection condition of said simulation model;

a model selector which selects said simulation model on the basis of at least one state of said subject state and said environment state and said set selection condition of the simulation model to read out the selected simulation model from said model data base;

a simulation calculator which applies said set initial state and said set simulation condition to said read out simulation model to calculate the simulation

as well as inputs at least one state of said subject state and said environment state to be obtained from the calculation; and

an outputting device which outputs the calculation result by said simulation calculator.

24. A simulation system according to claim 23, wherein said selection condition has changing information to change the selected simulation model and the changing information includes a content, said content is defined by accordance with a state of a subject and/or a state of an environment to be inputted from said simulation calculator and a threshold value set in advance with respect to said state of said subject and/or said state of said environment, said content designates simulation models which are different from each other with a border of said threshold value are designated.

25. A simulation system according to claim 24, further comprising a variable converter which reads out a variable value of a present simulation model from said simulation calculator, when the selected simulated model is changing by the changing information, converts this variable value into a variable value of a simulation model newly selected by said model selector and inputs the obtained variable value in said simulation calculator.

26. A simulation system according to claim 25,

wherein said variable converter includes means for carrying out the conversion of said variable value on the basis of a conversion rule, which describes a conversion relation of the variable values between the models, by using a state of a periphery and a state of an environment to be obtained from said simulation calculator.